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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,917	07/21/2005	Hidegori Okuzaki	275451US0PCT	5730
22850 7590 09/15/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER NGUYEN, VU ANH				
ART UNIT 1796		PAPER NUMBER		
NOTIFICATION DATE 09/15/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/542,917

**Applicant(s)**

OKUZAKI ET AL.

**Examiner**

Vu Nguyen

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-US)  
Paper No(s)/Mail Date 07/07/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action is in response to the Amendment filed 08/05/2009. Claims 1-7 are pending in this application.

### ***Specification***

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
3. The disclosure is objected to because of the following informalities: In the examples, the phrase "was replaced by" is repeatedly and mistakenly used for "was used in place of". For example, in example 5, ethanol was used in place of DBS but it is mistakenly written that ethanol was replaced by DBS.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102/103***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Inganas et al. (US 6,482,299) with evidentiary support for inherency from Elmér et al. (Polymer 46 (2005), 7896-7908) and Ghosh et al. (Adv. Mater. 1998, 10 (14), 1097-1099).

7. Corresponding to the limitations set forth in these claims, Inganas et al. teaches a conductive polymer gel. In one embodiment (col. 3-4, bridging paragraph), said gel comprises a blend of polystyrenesulfonic acid-doped polyethylenedioxythiophene (PEDOT-PSS) and polyethylene glycol (which reads on the claimed surfactant or alcohol). The blend contains 10wt% of the PEDOT-PSS. The gel is prepared by casting a film from an aqueous solution of the blend, drying the film, immersing the film in a 0.25 M  $\text{MgSO}_4$  aqueous solution for at least 5 hours, and removing excess  $\text{MgSO}_4$  by washing the film (i.e., gel) repeatedly with excess water.

8. Clearly, Inganas teaches all the limitations set forth in these claims but is silent as to a content of water contained in the gel. However, unless shown otherwise, there is a reasonable basis to expect the disclosed gel to contain an amount of water within the claimed range for the following reasons. It is known that PEG-containing film or membrane swell extensively in an electrolyte solution and the amount of water contained in the swollen film or membrane is between 60-80 wt% (see Elmér et al.,

section 3.2). The higher the content of PEG, the greater the swelling. The blend disclosed by Inganas apparently contains 90 wt% of PEG and, accordingly, the film is expected to contain 60-80 wt% of water after being immersed in the electrolyte and washed with water. One may reasonably observe that, since Elmér employs a monovalent  $\text{Li}^+$  electrolyte solution while Inganas employs a divalent  $\text{Mg}^{2+}$  electrolyte solution, the extent of swelling in the later solution is less than that in the former solution. However, it has been shown that a blend film having a low content of PEDOT-PSS (i.e., less than 3 wt%) swells extensively in deionized water even if the film has been previously treated with a 0.25 M  $\text{MgSO}_4$  aqueous solution because the cross-linked network, which limits the swelling and which is formed thanks to the  $\text{Mg}^{2+}$  ions, is disrupted when the  $\text{Mg}^{2+}$  ions are replaced with protons during the washing (see Ghosh et al., p. 1098, 2<sup>nd</sup> paragraph). For these reasons, the gel taught by Inganas is expected to contain an amount of water within the claimed range. Even if such swelling is not inherent, it is still obvious for the same reasons. The burden of proof is now shifted to the applicants to show otherwise. See MPEP § 2112 (I-V).

***Allowable Subject Matter***

9. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: No prior art of record teaches the claimed conductive polymer gel containing the surfactant alkylbenzenesulfonic acid.

### ***Response to Arguments***

11. Applicant's arguments with respect to the rejection of claims 1 and 3-7 under 35 U.S.C. 102(b) as being anticipated by Kim et al. (US 6,248,818) have been considered and are found persuasive. The amendment to claim 1 overcomes this rejection. The rejection has accordingly been withdrawn.

12. Applicant's arguments with respect to the rejection of claims 1-5 and 7 under 35 U.S.C. 102(b) as being anticipated by Inganas et al. (US 6,482,299) have been fully considered but they are not persuasive. The amendment to claim 1 does not overcome this rejection, which, as necessitated by the amendment, has been incorporated into a 102/103 rejection as set forth above, because the prior art gel inherently or obviously contains water in the claimed amount.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Nguyen whose telephone number is (571)270-5454. The examiner can normally be reached on M-F 7:30-5:00 (Alternating Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vu Nguyen  
Examiner  
Art Unit 1796

/David Wu/  
Supervisory Patent Examiner, Art Unit 1796